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10/016,656	12/12/2001	Keith D. Allen	R-390	3892

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DELTAGEN, INC.
740 Bay Road
Redwood City, CA 94063

EXAMINER

WILSON, MICHAEL C

ART UNIT	PAPER NUMBER
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1632

7

DATE MAILED: 07/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/016,656

Applicant(s)

ALLEN ET AL.

Examiner

Michael C. Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☒ Claim(s) 1-30 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Notice to Comply*.

DETAILED ACTION

Claims 1-30 are pending and under consideration.

The computer readable format of the sequence listing filed had errors, but was entered by STIC. The disk had non-ASCII "garbage" at the beginning/end of files that were deleted by STIC.

Specification

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. **The sequence in Fig. 2A is not described in the sequence listing originally filed. A new CRF and paper listing is required with the new sequence. The number should be incorporated into the description of the sequence on pg 10, line 5.** Applicants must file a "Sequence Listing" accompanied by directions to enter the listing into the specification as an amendment. Applicant also must provide statements regarding sameness and new matter with regards to the CRF and the "Sequence Listing." Applicant is requested to return a copy of the attached Notice to Comply with the reply. Failure to fully comply with the sequence rules in response to the instant office action will be considered non-responsive.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1 and 2, drawn to a construct having a first and second polynucleotide sequence homologous to a GPRC5B-like gene and a selectable marker, classified in class 435, subclass 320.1.
- II. Claims 3-9 and 14-18 drawn to a cell having a disruption in a GPRC5B-like gene, classified in class 435, subclass 325, and transgenic animals having a disruption in a GPRC5B-like gene, classified in class 800, subclass 8,
- III. Claims 10, 19 and 21, drawn to a method of identifying a compound using a transgenic animal having a disruption in a GPRC5B-like gene, classified in class 800, subclass 3.
- IV. Claims 11, 12 and 22, drawn to a method identifying a compound using a cell having a disruption in a GPRC5B-like gene, classified in various classes and subclasses.
- V. Claims 13, 20, 23 and 29, drawn to agonists of GPRC5B-like protein, classified in various classes and subclasses.
- VI. Claims 13, 20, 23 and 29, drawn to antagonists of GPRC5B-like protein, classified in various classes and subclasses.
- VII. Claim 24 drawn to a method of treating pain using an inhibitor of a GPRC5B-like protein, classified in various classes and subclasses.

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- VIII. Claim 25, drawn to methods of identifying compounds using GPRC5B-like protein, classified in class 530, subclass 350.
- IX. Claim 26, drawn to a method of identifying compounds using cells expressing GPRC5B-like protein, classified in class 435, subclass 325.
- X. Claims 27 and 28, drawn to a method of identifying agents using transgenics expressing GPRC5B-like protein, classified in class 800, subclass 3.
- XI. Claim 30, drawn to phenotypic data, having an unknown class and subclass.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not used together. The targeting construct does not have a disruption in the GPRC5B-like gene while the cells and animals of Invention II require a disruption in the GPRC5B-like gene.

Inventions I and III or IV are patentably distinct because the construct can be used to encode GPRC5B-like protein while the claims of Invention III or IV must have a disruption in the GPRC5B-like gene. DNA encoding GPRC5B-like has a different structure and function than cells or transgenics having DNA with a disruption in the

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GPRC5B-like gene. The burden required to search DNA encoding GPRC5B-like and disrupting a GPRC5B-like gene together would be undue.

Inventions I and V or VI are unrelated. The protocols and reagents required for targeting constructs are materially distinct and separate from those required for agonists or antagonists of a GPRC5B-like protein. The agonists or antagonists of a GPRC5B-like protein do not require the targeting construct and vice versa.

Inventions I and VII are patentably distinct because the construct can be used to encode GPRC5B-like protein while the administering an inhibitor of GPRC5B-like protein is used to treat pain. The protocols and reagents required for targeting constructs are materially distinct and separate from those required for treating pain. The targeting construct does not require the method and the method does not require the targeting construct.

Inventions I and VIII are patentably distinct because the construct can be used to disrupt the GPRC5B-like gene while the method requires the GPRC5B-like protein. The protocols and reagents required for targeting constructs are materially distinct and separate from those required for protein. The targeting construct does not require the method and the method does not require the targeting construct.

Inventions I and IX are patentably distinct because the construct can be used to disrupt the GPRC5B-like gene while the method requires the cells expressing a GPRC5B-like protein. The protocols and reagents required for targeting constructs are materially distinct and separate from those required for cells. The targeting construct does not require the method and the method does not require the targeting construct.

Inventions I and X are patentably distinct because the construct can be used to disrupt the GPRC5B-like gene while the method requires transgenics expressing a GPRC5B-like protein. The protocols and reagents required for targeting constructs are materially distinct and separate from those required for using transgenics to identify compounds. The targeting construct does not require the method and the method does not require the targeting construct.

Inventions I and VII are patentably distinct because the construct can be used to make GPRC5B-like protein while the data is used for calculations. The protocols and reagents required for constructs and data are materially distinct and separate. The constructs do not require the data and the data does not require the constructs.

Inventions II and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the method can be performed using cells or transgenics. The burden required to search an in vitro method with an in vivo method would be undue.

Inventions II and IV are related as product and process of use. In the instant case the method can be performed using cells or transgenics. The burden required to search an in vitro method with an in vivo method would be undue.

Inventions II and V or VI are patentably distinct because, for example, transgenics are used as in vivo models while the agents are used to treat disease. The

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protocols and reagents required for cells or transgenics having a disruption of a GPRC5B-like gene are materially distinct and separate from those required for agonists or antagonists of a GPRC5B-like protein. The cells/transgenics do not require the agonists or antagonists and vice versa.

Inventions II and VII are patentably distinct because the cells or transgenics can be used to identify compounds that modulate expression of GPRC5B-like proteins while administering an inhibitor of GPRC5B-like protein can be used to treat pain. The protocols and reagents required for identifying compounds using cells or transgenics are materially distinct and separate from those using the compounds to treat pain. The method of identifying the compounds does not require the method of using the compounds to treat pain and the method of using the compounds to treat pain does not require the identifying the compounds using cells or transgenics.

Inventions II and VIII are patentably distinct because the cells or transgenics of Group II require a disruption of GPRC5B-like proteins while the method of Group VIII requires using the GPRC5B-like protein. The protocols and reagents required for cells/transgenic having a disruption in a protein are materially distinct and separate from those required for using the protein to identify compounds. The cells/transgenics do not require the protein used in the method of Group VIII and the method of Group VIII does not require the cells/transgenics.

Inventions II and IX are patentably distinct because the cells or transgenics of Group II require a disruption of GPRC5B-like proteins while the method of Group IX requires using cells expressing the GPRC5B-like protein. The protocols and reagents

required for cells/transgenic having a disruption in a protein are materially distinct and separate from those required for using cells expressing the protein to identify compounds. The cells/transgenics do not require expressing the protein as in the method of Group IX and the method of Group IX does not require the cells/transgenics.

Inventions II and X are patentably distinct because the cells or transgenics of Group II require a disruption of GPRC5B-like proteins while the method of Group XI requires using transgenics expressing the GPRC5B-like protein. The protocols and reagents required for cells/transgenic having a disruption in a protein are materially distinct and separate from those required for using transgenics expressing the protein to identify compounds. The cells/transgenics having disruption in Group II do not require expression of the protein as in Group XI and the method of Group XI does not require cells/transgenics having a disruption in the protein.

Inventions II and XI are patentably distinct because, for example, transgenics are used as *in vivo* models while the data is used for calculations. The protocols and reagents required for cells and transgenics are materially distinct and separate from those required for data. Nor is "data" associated with a transgenic mouse having a disruption of a GPRC5B-like gene specific to such a mouse. Therefore, the data does not require the cells or transgenics and vice versa.

Inventions III and IV are patentably distinct because the method of Group III requires a transgenic while the method of Group IV requires cells. The protocols and reagents required for testing compounds *in vivo* are materially distinct and separate than those required to test compounds *in vitro*. The method of Group III does not

require the method of Group IV and vice versa. The burden required to search an in vitro method with an in vivo method would be undue.

Inventions III and V or VI are patentably distinct because the method is used to identify compounds while the agents are used to treat disease. The protocols and reagents required for using transgenics having a disruption of a GPRC5B-like gene are materially distinct and separate from those required for agonists or antagonists of GPRC5B-like protein. The method does not require the agonists or antagonists and vice versa.

Inventions III and VII are patentably distinct because the method is used to identify compounds that modulate expression of GPRC5B-like proteins while administering an inhibitor of GPRC5B-like protein can be used to treat pain. The protocols and reagents required for identifying compounds using transgenics are materially distinct and separate from those using the compounds to treat pain. The method of identifying the compounds does not require the method of using the compounds to treat pain and the method of using the compounds to treat pain does not require the identifying the compounds using transgenics.

Inventions III and VIII are patentably distinct because the transgenics of Group III require a disruption of GPRC5B-like proteins while the method of Group VIII requires using the GPRC5B-like protein. The protocols and reagents required for using a transgenic having a disruption in a protein are materially distinct and separate from those required for using the protein to identify compounds. The method does not

require the protein as in the method of Group VIII and the method of Group VIII does not require using transgenics as in Group III.

Inventions III and IX are patentably distinct because the transgenics used in the method of Group III require a disruption of a GPRC5B-like protein while the method of Group IX requires using cells expressing the GPRC5B-like protein. The protocols and reagents required for using transgenics having a disruption in a protein are materially distinct and separate from those required for using cells expressing the protein to identify compounds. The method does not require the protein as in Group IX and the method of Group IX does not require using transgenics as in Group III.

Inventions III and X are patentably distinct because the transgenics used in the method of Group III require a disruption of GPRC5B-like proteins while the method of Group XI requires using transgenics expressing the GPRC5B-like protein. The protocols and reagents required for using transgenics having a disruption in a protein are materially distinct and separate from those required for using transgenics expressing the protein to identify compounds. The method of Group X does not require expression of the protein as in Group XI and the method of Group XI does not require transgenics having a disruption in the protein as in Group X.

Inventions III and XI are patentably distinct because the method of Group III is used to identify compounds while data is used for calculations. The protocols and reagents required for using transgenics are materially distinct and separate from those required for data. The method does not require the data and the data does not require the method.

Inventions IV and V or VI are patentably distinct because the method is used to identify compounds while the agents are used to treat disease. The protocols and reagents required for using cells having a disruption of a GPRC5B-like gene are materially distinct and separate from those required for agonists or antagonists of GPRC5B-like protein. The method does not require the agonists or antagonists and vice versa.

Inventions IV and VII are patentably distinct because the method is used to identify compounds that modulate expression of GPRC5B-like proteins while administering an inhibitor of GPRC5B-like protein can be used to treat pain. The protocols and reagents required for identifying compounds using cells are materially distinct and separate from those using the compounds to treat pain. The method of identifying the compounds does not require the method of using the compounds to treat pain and the method of using the compounds to treat pain does not require the identifying the compounds using cells.

Inventions IV and VIII are patentably distinct because the cells used in the method of Group IV require a disruption of GPRC5B-like proteins while the method of Group VIII requires using the GPRC5B-like protein. The protocols and reagents required for using cells having a disruption in a protein are materially distinct and separate from those required for using the protein to identify compounds. The method of Group IV does not require the protein as required in the method of Group VIII and the method of Group VIII does not require using cells as required in the method of in Group IV.

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Inventions IV and IX are patentably distinct because the cells used in the method of Group IV require a disruption of a GPRC5B-like protein while the method of Group IX requires using cells expressing the GPRC5B-like protein. The protocols and reagents required for using cells having a disruption in a protein are materially distinct and separate from those required for cells expressing the protein. The method of Group IV does not require expressing the protein and the method of Group IX does not require using a disruption in the protein.

Inventions IV and X are patentably distinct because the cells used in the method of Group IV require a disruption of GPRC5B-like proteins while the method of Group XI requires using transgenics expressing the GPRC5B-like protein. The protocols and reagents required for using cells having a disruption in a protein are materially distinct and separate from those required for using transgenics expressing the protein to identify compounds. The method of Group IV does not require expression of the protein and the method of Group XI does not require a disruption in the protein.

Inventions IV and XI are patentably distinct because the method of Group IV is used to identify compounds while data is used for calculations. The protocols and reagents required for using cells are materially distinct and separate from those required for data. The method does not require the data and the data does not require the method.

Inventions V and VI are patentably distinct because the agonist is used to increase the function of GPRC5B-like protein while the antagonist is used to decrease the function of GPRC5B-like protein. The agonist and antagonist have different

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structures and would require different searches. The agonist does not require the antagonist and vice versa.

Inventions V and VII are patentably distinct because the agonist is used to increase the function of GPRC5B-like protein while administering an inhibitor of GPRC5B-like protein can be used to treat pain. The protocols and reagents required for agonists are materially distinct and separate from those using the compounds to treat pain. The agonist does not require the method of using the compounds to treat pain and the method of using the compounds to treat pain does not require the agonist.

Inventions V and VIII are patentably distinct because the agonist is used to increase the function of GPRC5B-like protein while the method is used to identify compounds and requires the GPRC5B-like protein. The protocols and reagents required for agonists are materially distinct and separate from those required for using the protein to identify compounds. The agonist does not require the method and the method does not require the agonist.

Inventions V and IX are patentably distinct because the agonist is used to increase the function of GPRC5B-like protein while the method of Group IX requires using cells expressing the GPRC5B-like protein. The protocols and reagents required for agonists are materially distinct and separate from those required for cells expressing the protein. The agonist does not require the method and the method does not require the agonist.

Inventions V and X are patentably distinct because the agonist is used to increase the function of GPRC5B-like protein while the method is used to identify

compounds. The protocols and reagents required for agonists are materially distinct and separate from those required for using transgenics expressing the protein to identify compounds. The agonist does not require the method and the method does not require the agonist.

Inventions V and XI are patentably distinct because the agonist is used to increase the function of GPRC5B-like protein while data is used for calculations. The protocols and reagents required for agonists are materially distinct and separate from those required for data. The agonist does not require the data and the data does not require the agonist.

Inventions VI and VII are patentably distinct because the antagonist is used to decrease the function of GPRC5B-like protein while administering an inhibitor of GPRC5B-like protein can be used to treat pain. The protocols and reagents required for antagonists are materially distinct and separate from those using the compounds to treat pain. The antagonist does not require the method of using the compounds to treat pain and the method of using the compounds to treat pain does not require the antagonist.

Inventions VI and VIII are patentably distinct because the antagonist is used to decrease the function of GPRC5B-like protein while the method is used to identify compounds and requires the GPRC5B-like protein. The protocols and reagents required for antagonists are materially distinct and separate from those required for using the protein to identify compounds. The antagonist does not require the method and the method does not require the antagonist.

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Inventions VI and IX are patentably distinct because the antagonist is used to decrease the function of GPRC5B-like protein while the method of Group IX requires using cells expressing the GPRC5B-like protein. The protocols and reagents required for antagonists are materially distinct and separate from those required for cells expressing the protein. The antagonist does not require the method and the method does not require the antagonist.

Inventions VI and X are patentably distinct because the antagonist is used to decrease the function of GPRC5B-like protein while the method is used to identify compounds. The protocols and reagents required for antagonists are materially distinct and separate from those required for using transgenics expressing the protein to identify compounds. The antagonist does not require the method and the method does not require the antagonist.

Inventions VI and XI are patentably distinct because the antagonist is used to decrease the function of GPRC5B-like protein while data is used for calculations. The protocols and reagents required for antagonists are materially distinct and separate from those required for data. The antagonist does not require the data and the data does not require the antagonist.

Inventions VII and VIII-X are patentably distinct because administering an inhibitor of GPRC5B-like protein can be used to treat pain while the methods of Group VIII-X are used to identify compounds and requires the GPRC5B-like protein. The protocols and reagents required for treating pain are materially distinct and separate from those required for identifying compounds. The method of treating pain does not

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require the identification using the methods of Groups VIII-X and the methods of Groups VIII-X do not require the treating pain.

Inventions VII and XI are patentably distinct because administering an inhibitor of GPRC5B-like protein can be used to treat pain while data is used for calculations. The protocols and reagents required for treating pain are materially distinct and separate from those required for data. The method does not require the data and the data does not require the method.

Inventions VIII and IX are patentably distinct because the method of Group VIII requires a GPRC5B-like protein while the method of Group IX requires using cells expressing the GPRC5B-like protein. The protocols and reagents required for using protein are materially distinct and separate from those required for cells expressing the protein. The method of Group VIII does not require the method of Group IX and the method of Group IX does not require the method of Group VIII.

Inventions VIII and X are patentably distinct because the method of Group VIII requires a GPRC5B-like protein while the method of Group X requires transgenics. The protocols and reagents required for using proteins are materially distinct and separate from those required for using transgenics. The method of Group VIII does not require the method of Group X and the method of Group X does not require the method of Group VIII.

Inventions VIII and XI are patentably distinct because the method is used to identify compounds while data is used for calculations. The protocols and reagents required for identifying compounds are materially distinct and separate from those

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required for data. The method does not require the data and the data does not require the method.

Inventions IX and X are patentably distinct because the method of Group IX requires cells expressing a GPRC5B-like protein while the method of Group X requires transgenics expressing a GPRC5B-like protein, i.e. *in vitro* vs. *in vivo*. The protocols and reagents required for identifying compounds *in vitro* and *in vivo* are materially distinct and separate. The method of Group IX does not require the method of Group X and the method of Group IX does not require the method of Group IX.

Inventions IX and XI are patentably distinct because the method is used to identify compounds while data is used for calculations. The protocols and reagents required for identifying compounds are materially distinct and separate from those required for data. The method does not require the data and the data does not require the method.

Inventions X and XI are patentably distinct because the method is used to identify compounds while data is used for calculations. The protocols and reagents required for identifying compounds are materially distinct and separate from those required for data. The method does not require the data and the data does not require the method.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

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Because these inventions are distinct for the reasons given above and the search required for Group I-IX is separate, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wilson who can normally be reached on Monday through Friday from 9:00 am to 5:30 pm at (703) 305-0120.

Questions of formal matters can be directed to the patent analyst, Dianiece Jacobs, who can normally be reached on Monday through Friday from 9:00 am to 5:30 pm at (703) 305-3388.

Questions of a general nature relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1235.

If attempts to reach the examiner, patent analyst or Group receptionist are unsuccessful, the examiner's supervisor, Deborah Reynolds, can be reached on (703) 305-4051.

The official fax number for this Group is (703) 308-4242.

Michael C. Wilson



**MICHAEL WILSON
PRIMARY EXAMINER**